AMENDMENTS TO THE CLAIMS

1. (Original) An audio mixing apparatus with dynamic-range control and used to transform an input signal to an output signal, comprising:

a gain attenuation unit used to attenuate a first input signal with a predetermined ratio;

a downmix unit used to mix an output signal of the gain attenuation unit;

a rectification unit used to inversely rectify a second input signal and produces an absolute value for the second input signal;

a power gain computing unit used to calculate the power gain of an output signal of the rectification unit; and

a gain adjusting unit used to adjust an output audio signal of the gain adjustment unit by the absolute value of the downmix unit and an output of the power gain compute unit;

whereby the first input signal is inputted into the gain attenuation unit and the downmix unit for producing an output signal to the gain adjustment unit; the second input signal is processed by the rectification unit and the power gain compute unit to produce a gain value, then the gain value is inputted the gain value to the gain adjustment unit; the gain adjusting unit adjusts and outputs an output gain based on the gain value.

2. (Original) The audio apparatus for downmix as in claim 1, wherein the rectification unit rectifies the input signal with inversing a plurality of negative parts of the input signal and produces an absolute value.

3. (Currently Amended) A method for audio downmix with dynamic-range control transforming, an audio input signal to an output signal, comprising steps as follows:

calculating power values of a plurality of surround audio channels and a central audio channel;

adjusting a gain of dynamic range control, the gain being obtained by rectifying the input signal with inversing a plurality of negative parts of the audio input signal and producing an absolute value;

processing a calculation of the gain;

changing the calculated gain and outputting an output gain;

estimating whether the output gain reaches a default value or not; and

obtaining ~~a gain which is~~ a correct gain value based on the output gain.

4. (Original) The method for audio downmix with dynamic-range control as in claim 3, wherein the surround audio channels comprise a left surround audio channel and a right surround audio channel.

5. (Original) The method for downmix as in claim 3, further comprising a step for estimating saturation state of the surround audio channel in the calculating step.

6. (Original) The method for downmix as in claim 5, wherein the step of processing a calculation of the gain is to estimate whether the left surround audio channel, the right surround

audio channel and the central surround audio channel are saturated or not; when saturated, a saturation procedure is executed.

7-8. (Cancelled)

9. (Currently Amended) The method for downmix as in claim ~~8~~3, wherein in the estimating step, when the output gain reaches the default value, then process the obtaining step as in claim 3~~; when the output gain reaches the default value, then return to the processing step as in claim 3~~.

10. (Currently Amended) ~~A~~ The method for downmix as in claim 8, wherein the default value is between one and two.

11. (Currently Amended) ~~A~~ The method for downmix as in claim 8, wherein the gain is changed in a fade-in or fade-out manner in the changing step.

12. (New) The method for downmix as in claim 3, wherein in the estimating step, when the output gain fails to reach the default value, then process the changing the calculated gain step as in claim 3.